Office of Business Transformation

CMO Point Paper

How End-to-End (E2E) Business Processes Enable Army Enterprise Management

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DRAFT

1 Executive Summary

This paper describes how the Army's business architecture and its focus on end-to-end (E2E) business processes is one of the keys to developing an integrated management system capable of managing across the Army business enterprise.

Through its focus on enterprise management, the Army is seeking to develop a fully integrated management system that will enable the Generating Force to align better with the Operating Force. "One integrated Army management system – end-to-end, and top-to-bottom – generating the most capable and ready Army at best value," will ensure the Army works toward a common purpose, across lifecycle management functions, and through and across organizational layers.

A business architecture approach to enabling an integrated management system is to adopt E2E processes to formulate the blueprint for managing across the enterprise. This approach enables IT governance to re-orient behavior toward an enterprise view that promotes transparency, collaboration, integration and innovation.

2 Introduction to E2E Business Processes

2.1 Why today's Army can't see itself?

Army business operations are currently managed and optimized either functionally (i.e., G4) or by command (i.e., AMC). They certainly aren't managed end-to-end across the enterprise. The Army's portfolio of business architecture is similarly Balkanized and includes system architectures that have been developed independent of one another. Scoped by functional domains, these stove-piped architectures have been developed to optimize vertically, rather than horizontally across the enterprise. This traditional focus on domain/command/system-based portfolios is why the Army can't see itself or why it can't provide clear and accurate views of how the Army actually operates across the enterprise.

2.2 DoD's emphasis on end-to-end (E2E) business processes

As pointed out in the first of this series of papers, the Department of Defense has incorporated and now emphasizes end-to-end business processes within the Business Enterprise Architecture (BEA). Driving this change was the explicit acknowledgement by the Office of the Secretary of Defense of the value to be realized from cross-functional E2E business processes that span Core Business Mission (CBM) boundaries, instead of optimizing functions.

It is this enterprise perspective that supports the DoD's move from a functional-centered approach (finance, human resources, acquisition, logistics, health, etc.) to one that is fully integrated—*end-to-end…top-to-bottom—capable of meeting warfighter needs at best value.*

2.3 How E2E processes enable an integrated Army management system

E2E business processes provide a set of integration threads fundamental to managing the Army as an enterprise. More specifically, the integration of traditional domain business architectures is at the core to managing the Army as an enterprise. It is the integration threads (E2E business processes) and the

business architecture (business rules, data standards, etc.) that are the principal enablers of achieving better alignment between the Generating and Operating Force models.

To better understand what we mean, the figure below depicts how an integration thread (metro line) provides a capability (travelling across town) by spanning the functional domains (Virginia, Maryland, and Washington D.C.) of the Washington metro area (enterprise). It is the business architecture (business rules, data standards, standard configuration, and performance metrics) that enables the enterprise to provide seamless, visible, and scalable operations to riders of the metro rail system (operating Army), regardless of the functional domains (Virginia, Maryland, and Washington D.C.) they traverse while in the system.

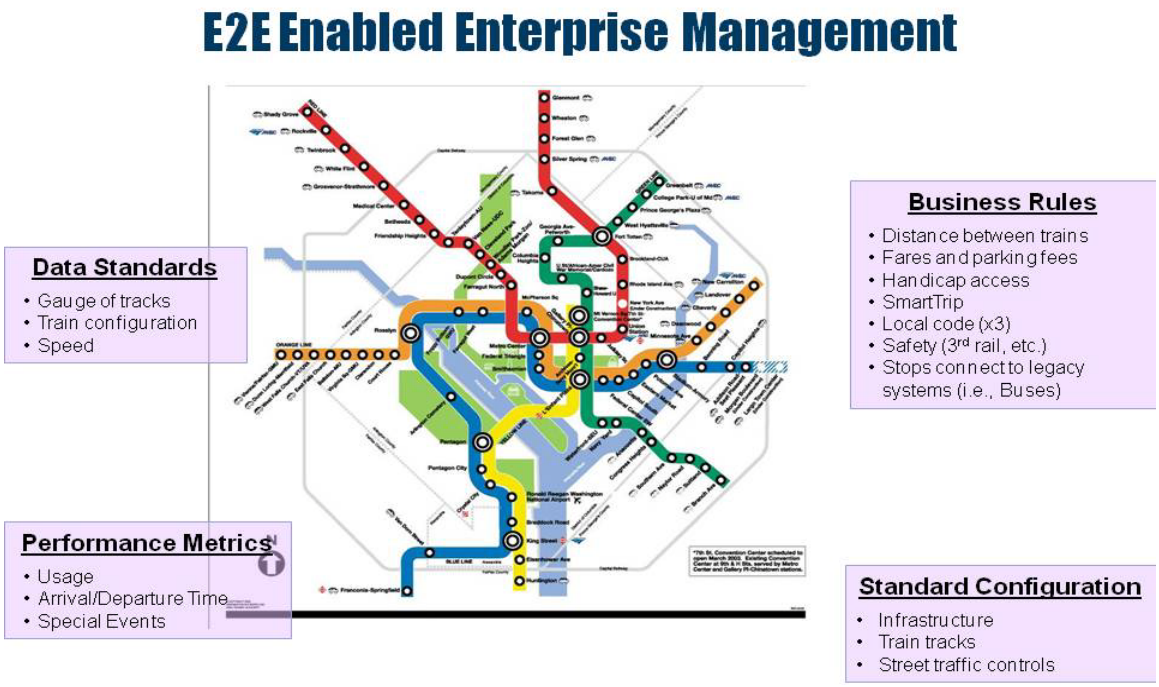

Figure 1, E2E Enabled Enterprise Management

In contrast, the Army has allowed its "VA, MD, and DC" (functional domains) to develop their own metro systems without the benefit of an enterprise architecture. The result is an Army comprised of locally optimized functional domains but a sub-optimized Army enterprise.

In other words, while efforts like GFEBS optimize financial operations and GCSS-Army optimizes logistics operations, the Army's current procure-to-pay (P2P) capability is woefully sub-optimized, not visible, expensive, and certainly not seamless. Worse, in many cases we are "fixing" the problem by developing costly interfaces rather than managing the enterprise with a well-developed, enterprise business architecture. By federating the functionally optimized domain architectures, the Army will be able to see itself across the enterprise for the first time.

2.4 ARFORGEN as an E2E process

As depicted in Figure 2 below, ARFORGEN is an E2E process (deployment-to-redeployment) which relies upon all four Core Enterprises (CE) to create an enterprise approach to managing force generation. When completed, the ARFORGEN E2E process will have achieved:

- Strategic alignment among the Core Enterprises, facilitated in part by the new Army CMO to ensure a common force generation approach and set of priorities that will be consistently governed by the Army Executive Board (AEB);
- Standardized processes, data, and business rules that significantly enhance the CE's ability to process operational data and share information among themselves and throughout the Army;
- Well-integrated data sources that provide transparency of useable information.

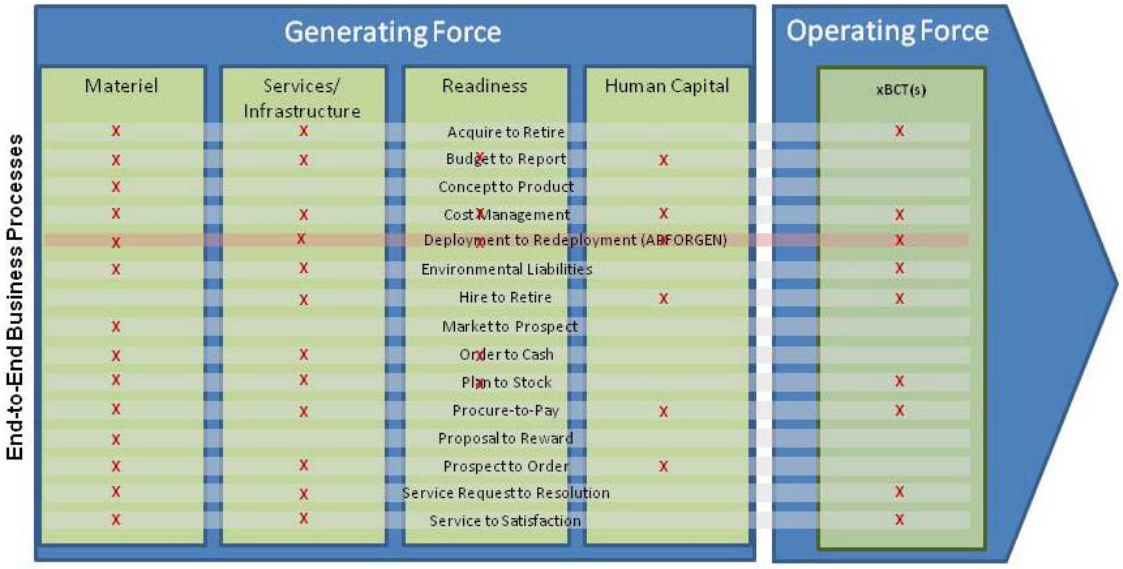

Figure 2, ARFORGEN as an E2E business process

The importance of viewing the business across the enterprise is best exemplified by General Hondo Campbell, FORSCOM commander, who identified the ARFORGEN business architecture as a key enabler of what he calls "FORSCOM's ability to see itself."

3 Managing Across the Enterprise

3.1 Integrating the Army Business Enterprise

End-to-end business processes implementation is a critical part of the Army's efforts to manage across the enterprise, i.e. to address questions about long-term capability sustainment, cost, affordability, and risk. As a first step, the Army will federate or "band together" domain architectures to enable coherent multi-functional end-to-end process capabilities consistent with direction documented in the BEA Federation Strategy.

As depicted in the Figure 3 below, the Army will leverage the Business Enterprise Architecture (BEA) and the 15 end-to-end business processes to federate the disparate domains and system architectures to begin creating a unified, holistic Army Business Systems Architecture (ABSA). In addition to the 5 traditional functions performed by the Business Mission Area, we have also included Health Services, Training, and Force Management because they complete the scope needed to manage both generating and operating forces.

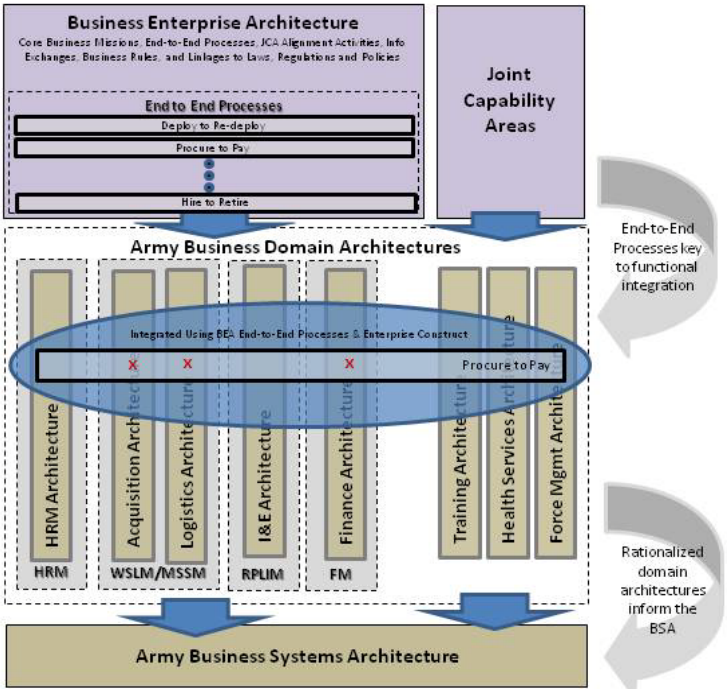

Figure 3, Federated domain architectures using E2E processes

This federated architecture strategy enables the Army to expedite its business transformation by better coordinating linkages among the domains (horizontal federation) while leveraging and aligning to the DoD's corporate-level architecture known as the Business Enterprise Architecture (BEA). Specifically, this approach focuses on two activities:

- *Promote Common Vocabulary*- Promulgate standards and information structures that increase semantic understanding of content across architecture efforts within the Army.
- *Align Domain/Command/System Operational Architecture Content* – Develop composite architectures representing the union of the DoD BEA and Army operational architectures comprising the Army's Business Mission Area, extended to three additional LWN/BC sub-segments (see Fig. 3, under the heading, JCAs.)

This top down approach also requires the process design be accomplished as a high-level, cross - functional collaborative effort. This would then be followed by process implementations that deliver timely results and optimized E2E processes.

3.2 Develop the Business Systems Architecture

As a next step, the Army Business Systems Architecture will be extended using the Army's ERP COTS vendors' solution framework plus enrichments/extensions representing functionality not inherent to the Army Converged ERP environment. This approach provides the level of detail concerning requirements that is necessary for implementing functionality, either new or that currently delivered via legacy business systems, into the Army's Converged ERP. Furthermore, because ERP COTS naturally view the enterprise in terms of end-to-end processes, the Army Business Systems Architecture comports well with the Army's stated direction for business transformation concerning end-to-end processes.

Business System Architecture Value Proposition:

- Minimizes custom process modeling efforts by adopting existing COTS Solution Frameworks (e.g., industry and defense end-to-end processes)
- Accelerates adoption of COTS ERP capabilities by enabling configuration of CRPs
- Addresses BEA compliance prior to implementation

3.3 Align the Warfighter with the business

Several of the generating force functions extend to and are performed in support of the operating force—personnel, logistics, finance, contracting. Arbitrary boundaries are drawn between the generating and operating forces resulting in breaking end-to-end processes into segments, each evolving into different directions with regard to data, business rules, laws, regulations, policies, etc. It is therefore imperative that the Army's business architecture includes the requirements of both generating and operating forces. This is accomplished by extending end-to-end processes from the Generating Force in the Continental United States down to nodes within the Brigade Combat Teams.

Thus, the architecture includes those processes that extend, for example, from a weapon system or a supply clerk in the operating force; seamlessly back to an item manager located in Army Materiel Command operating in Huntsville, Alabama. As the Army continues to deploy web-enabled access to systems operating in the United States, the difference between the physical configuration of the system and the logical architecture of the process will blur, that is, data entry and access will take place in the unit, while the processing and analysis will take place in the continental United States.

Efforts are underway to ensure that the processes that span the generating and operating forces are adequately defined in the architecture. To accomplish this, we are using the Army Integrated Logistics Architecture as the baseline for adding the remaining business functions that are performed in the Brigade Combat Teams. See Figure 2.

3.4 Align investments with business architecture

Once the Army Business Enterprise Architecture has been established, the OBT, under direction from the CMO, will coordinate with appropriate investment review boards to 1) have system/program managers perform self assessments of their system against it using a compliance framework as part of annual certifications, and 2) have each domain/command/system architect register each proposed *capability investment* in an architecture

Investment Alignment Value Proposition:

- Combines compliance and PfM reporting requirements into a single activity for program managers
- Identifies Authoritative Data Sources for business related information

repository before it is submitted to the appropriate board. Self assessments will be synchronized with current IRB schedules to ensure no duplication of work for program managers. As each system/program is aligned to the business architecture, decision makers will begin to have visibility as to where in the IT landscape gaps and overlaps exist. Additionally, the same method will be used to define business focused capability sets, providing direct traceability from capability sets to architectures. The results of this activity will strengthen the Army's portfolio management capability and will provide valuable input to the As-Is architecture.

3.5 Business enterprise governance

More importantly, the Army's portfolio of architectures reflects the numerous constituencies that comprise the governance structure of Army business systems. It also raises a need to determine the appropriate approach to managing as an enterprise, that is, through Core Enterprises, end-to-end process, or some hybrid.

Overseen by an enterprise body, the integration of the various architectures poses an excellent opportunity for all concerned to collaborate on establishing and understanding how Army business operates. The Training and Doctrine Command, through the Army Capabilities Integration Center and joined by its functional (Warfighter) activities, performs a similar function for battlefield operations, that is, rationalizes (including integration): concepts of operations, architectures, and capabilities requirements. The scope of their current architecture effort does not however, address the full extent of generating force activities. Building an integrated management system for Army business operations requires the formulation of such an operational, system and technical architecture and the capability to develop this architecture.

4 Conclusion

This paper describes how the Army's architecture development effort uses end-to-end (E2E) business processes to enable enterprise management of the Army. This paper also describes our approach to rationalizing, using, and extending the Army's current business architectures.

The key to developing an integrated management system is to use E2E processes to formulate a blueprint for managing across the Army business enterprise. This envisioned blueprint comprises an operational architecture built on an extended version of DoD's Business Enterprise Architecture (BEA) and a solution architecture built upon the commercial off the shelf (COTS) enterprise resource planning (ERP) solution architecture. We are leveraging both to build a single holistic architecture of the Army Business Enterprise that support multiple views at multiple levels to replace what have traditionally been functional stove pipes.